CLAIMS

1. A prosthesis, in particular a stent or a shunt, arranged to be implanted at least partially in a blood vessel in contact with a wall of the blood vessel and comprising at least one releasable therapeutic agent, characterised in that said releasable therapeutic agent comprises melatonin (N-acetyl-5-methoxytryptamine) and/or a drug derived from melatonin and having analogous effects on the healing response of the vessel wall, the therapeutic agent being present in an amount effective to modify the healing response of the vessel wall after tissue injury caused by the implantation of the prosthesis by inhibiting inflammation, cell proliferation and cell ingrowth into the prosthesis.

2. A prosthesis according to claim 1, characterised in that said therapeutic agent is coated on the prosthesis.

3. A prosthesis according to claim 1 or 2, characterised in that said prosthesis is an endovascular stent, more particularly a coronary stent.

4. A prosthesis according to claim 3, characterised in that the stent is made of a wire, optionally a hollow wire filled with said therapeutic agent or with a product containing said therapeutic agent.

5. A prosthesis according to claim 3, characterised in that the stent comprises a generally thin walled cylinder, said cylinder containing a plurality of struts, said struts expandable depending on the amount of force applied to said strut, and said struts having a generally uniform thickness.

6. A prosthesis according to claim 3, characterised in that the stent comprises a generally thin walled structure containing a plurality of struts, the struts expandable to assume the shape of a lumen into which the stent is to be placed, said struts having a thickness and are provided with one or more recesses formed in at least one of said struts, said recesses having a closed perimeter on all sides and an open top and

eventually an open bottom, the recesses containing said therapeutic agent or a product containing said therapeutic agent.

7. A prosthesis according to any one of the claims 3 to 6, characterised in that said melatonin, and/or said drug derived from melatonin, is coated either as such on the stent surface or is embedded in a biocompatible oil or fat or in a biocompatible polymer coated on the stent, or is conjugated to any substance coated on the stent.

8. A prosthesis according to any one of the claims 1 to 7, characterised in that the prosthesis has a total load of said melatonin and/or of said melatonin derived drug of at least 0.001 µg/mm², preferably of at least 0.1 µg/mm², more preferably of at least 0.5 µg/mm² and most preferably of at least 2 µg/mm² stent area, the total load of said melatonin and/or of said melatonin derived drug being preferably lower than 50 µg/mm², more preferably lower than 10 µg/mm², and most preferably lower than 6 µg/mm² stent area.

9. A prosthesis according to any one of the claims 1 to 8, characterised in that the prosthesis is arranged to release said therapeutic agent over a period of at least 6 hours, preferably over a period of at least one week, after implantation in the blood vessel.

10. Use of melatonin (N-acetyl-5-methoxytryptamine) and/or of a drug derived from melatonin and having analogous effects on the healing response of a blood vessel wall, as a single bioactive component or in combination with one or more other bioactive components, to manufacture a pharmaceutical composition for modifying the healing response after tissue injury caused by implantation or insertion of an endoluminal prosthesis, catheter or shunt in a blood vessel, by inhibiting inflammation induced by the injury and by preventing cell proliferation and cell ingrowth into the endoluminal prosthesis or catheter or in the shunt.

11. Use of melatonin (N-acetyl-5-methoxytryptamine) and/or of a drug derived from melatonin and having analogous effects on the

healing response of a blood vessel wall, as a single bioactive component or in combination with one or more other bioactive components, to manufacture a pharmaceutical composition for inhibiting proliferation and hyperplasia of intimal smooth muscle cells after tissue injury caused by implantation or insertion of an endoluminal prosthesis, catheter or shunt in a blood vessel.

12. Use according to claim 10 or 11, characterised in that said melatonin and/or said drug derived from melatonin is applied on the surface of and/or in recesses in the prosthesis, catheter or shunt.

13. A method for modifying healing response after tissue injury caused by the implantation or insertion of an endoluminal prosthesis, catheter or shunt in a blood vessel by inhibiting inflammation induced by the injury and by preventing cell proliferation and cell ingrowth into an endoluminal prosthesis or catheter or in a shunt, using melatonin (N-acetyl-5-methoxytryptamine) and/or a drug derived from melatonin and having analogous effects on the healing response of a blood vessel wall, which melatonin and/or which drug is applied locally as a single bioactive component or in combination with other bioactive components, by coating melatonin and/or said drug derived from melatonin on the prosthesis, catheter or shunt.